NOAA's Coastal Assessment and Data Synthesis System

Land Use / Land Cover (1990 Census - Urban Area Enhanced)

Dataset Description

Land Use / Land Cover (LULC) data consisting of 39 land use types falling into 10 land use classes were developed for the nation by the U.S. Geological Survey (USGS) from the middle 1970s to the early 1980s using aerial photography and LANDSAT images. The cell resolution of the USGS LULC data was 250 by 250 meters at 1:250,000 scale. These data were improved and updated by Texas A&M University using 1990 Census information to enhance the characterization of urban areas to better reflect present conditions. Texas A&M utilized the LULC 1:250,000-scale mapping format, which has a quadrangle unit of 1 degree of latitude by 2 degrees of longitude, and performed an overlay operation with the 1990 Topologically Integrated Geographic Encoding and Referencing (TIGER) Census map in the GIS GRASS environment. The land use field type 'UA' (urban areas) from the Tiger Census map was used to overwrite the LULC data. Locations where the original land use data exist in the middle of a Census defined urban area occur because the 'UA' field from the TIGER Census files had no data for that location. In addition, the original LULC did not have data for approximately 15 quads. Subsequently, 1991 Advanced Very High Resolution Radiometer (AVHRR) 1-km Land Cover Characterization Database data was used to fill in the information for these missing quads. The resultant geographic data files were then provided to the National Coastal Assessments (NCA) team of the Special Projects Office (SPO) of the National Ocean Service (NOS) in GIS GRASS format.

Upon processing the information (see Data Processing section for details), NCA developed areal estimates of the number of square miles of the 39 land use types and 10 land use classes within each CAF watershed, HUC, and county. From this areal information percentages were calculated as to the percent of each spatial area of interest that is comprised by a particular land use type and/or class. The specific land use types and general classes in this dataset are as follows:

Land Use Type	*Land Use Class*
Urban (1990 Census Population Enhancement)	Urban or Built-up Land
Residential	Urban or Built-up Land
Commercial and Services	Urban or Built-up Land
Industrial	Urban or Built-up Land
Transportation, Communications, and Utilities	Urban or Built-up Land
Industrial and Commercial Complexes	Urban or Built-up Land
Mixed Urban or Built-up Land	Urban or Built-up Land
Other Urban or Built-up Land	Urban or Built-up Land
Cropland and Pasture	Agricultural Land
Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas	Agricultural Land
Confined Feeding Operations	Agricultural Land
Other Agricultural Land	Agricultural Land
Herbaceous Rangeland	Rangeland
Shrub and Brush Rangeland	Rangeland
Mixed Rangeland	Rangeland
Deciduous Forest Land	Forest Land
Evergreen Forest Land	Forest Land
Mixed Forest Land	Forest Land
Streams and Canals	Water
Lakes	Water
Reservoirs	Water
Bays and Estuaries	Water

Forested Wetland	Wetland
Non-forested Wetland	Wetland
Dry Salt Flats	Barren Land
Beaches	Barren Land
Sandy Areas Other than Beaches	Barren Land
Bare Exposed Rock	Barren Land
Strip Mines, Quarries, and Gravel Pits	Barren Land
Transitional Areas	Barren Land
Mixed Barren Land	Barren Land
Shrub and Brush Tundra	Tundra
Herbaceous Tundra	Tundra
Bare Ground	Tundra
Wet Tundra	Tundra
Mixed Tundra	Tundra
Perennial Snowfields	Perennial Snow or Ice
Glaciers	Perennial Snow or Ice
No Data	No Data

The data are available for four distinct spatial aggregations as outlined below. To view the data dictionary of each dataset, refer to NOAA's Coastal Assessment and Data Synthesis System (http://coastalgeospatial.nos.noaa.gov).

1) Coastal Watersheds (from NOAA's Coastal Assessment Framework),
2) Hydrologic Cataloging Units (8-digit sub-watersheds from the U.S. Geological Survey and a building block of NOAA's CAF),
3) Counties, and
4) States (aggregated from Counties).

Source(s) of Information

Original Land Use and Land Cover (LULC) Data:
Branch of Technical Management
Earth Science Information Center
US Geological Survey
507 National Center
Reston, Virginia 22092
(703) 860-6045

LULC with 1990 Census Urban Areas Enhanced:
Texas Agricultural Experiment Station
808 East Blackland Rd.
Temple, Texas 76502
(254) 770-6670

Data Processing

To geo-reference the land use data to NOAA's Coastal Assessment Framework (CAF) watershed boundaries, a land-only CAF digital geography was unioned with a land-only county digital geography to obtain a geography containing unique polygons. This unique watershed/county map was then intersected with the land use map (LULC + 1990 Population Enhancement) to obtain intersected areas of land uses in each unique polygon. The original land use map from Texas A&M was previously improved by correcting a section of a primarily non-urbanized quad area (lse47122) that was not in its proper location (as supplied by Texas A&M). The areal report was then imported to SAS for data aggregation to yield the number of square miles of a particular land use type or class for each CAF watershed, HUC, and county.

Additionally, the percent of any one land use type and/or class was calculated for each spatial type as well.

Contact(s) for Data Processing

For expert assistance with the data processing techniques used in developing this data, please contact;

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Quality Control

The spatial areas of unique polygons aggregated from the land use file matched very well with areas of the unique polygons in the CAF files. The quality of ground-truthing in the original LULC geographic files may be inadequate. The sum of all land use types in the unique polygon, excluding Bays and Estuaries, was compared against unique land area in the CAF. There were no cases of unique areas from the resultant land use file that were greater than unique land areas from the original CAF files. For cases where unique land areas were greater than the unique sums of land use areas, the area difference was equally distributed in the inland water land use types: streams and canals, lakes and reservoirs.

Citation

Land Use / Land Cover Data (1990 Census - Urban Area Enhanced). Coastal Assessment and Data Synthesis (CA&DS) System , 1999. National Coastal Assessments (NCA) Branch, Special Projects Office (SP), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA). Silver Spring, Maryland.

Applicable Digital Geography

The data are associated to distinct spatial aggregations. Geographic Information System (GIS) digital geographies are available for associating these data to their appropriate spatial aggregations. The following GIS files apply to and should be used with these data during GIS processing.

Coastal Watersheds
Hydrologic Cataloging Units
Counties
States

To download the data or an applicable digital geography, visit:
http://coastalgeospatial.nos.noaa.gov/data_gis.html.

For Additional Information:

For additional information, refer to NOAA's Coastal Assessment and Data Synthesis (CA&DS) System, or contact:

The CA&DS team.
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